

REMARKS

Prior to this reply, Claims 1-22 were pending in the application. Claims 6, 11, 16, 22 have been amended to clarify antecedent basis issues. Claims 1, 7, 12, 17, 18, 19 have been amended to clarify meaning already extant in the claims. Claims 15, 16 have been amended to indicate the proper base claim. New Claims 23-43 are added by way of this amendment. Therefore, Claims 1-43 are presently pending in the application.

NEW CLAIMS

Claims 23-43 are added to claim additional embodiments of the invention that are described in the specification as originally filed. Hence, no new matter is introduced in the application by way of this amendment.

35 U.S.C. 103 REJECTIONS

All amended claims are to embodiments of the invention that are described in the specification as originally filed. Hence, no new matter is introduced in the application by way of these amendments.

1. Claims 1-17 and 19-22 are rejected under 35 USC 103(a) as allegedly unpatentable over Zaumen et al. (US 6,118,760) in view of Hedge (US 6,570,875), hereinafter referred to as "Zaumen in view of Hedge". The rejection is respectfully traversed.

Although Claims 1, 7, 12, and 17 are not the same, because the Office Action has applied the same reasoning for each of Claims 1, 7, 12, and 17, the following remarks will consider all of these claims together.

Applicants understand that the Office Action alleges that the Zaumen discloses all aspects of Claims 1, 7, 12, and 17 except a bidirectional data flow, and that Hedge discloses automatically applying a QoS treatment to a network flow (Abstract) where the network flow is bidirectional (col. 21; lines 28-35). This rejection is not correct.

Although specific sections of Zaumen are cited in the Office Action, the remarks of the Office Action do not clearly indicate which sections of Zaumen allegedly show each feature of Claims 1, 7, 12, and 17. However, in order to expedite prosecution, this reply assumes that Zaumen is applied as a whole to Claims 1, 7, 12, and 17.

The Zaumen patent teaches a method for obtaining QOS information, storing QOS information in a memory associated with a unidirectional dataflow, and applying the QOS information to messages associated with the unidirectional dataflow. The Hedge patent teaches performing switching and routing of incoming data packets by determining with what flow they are associated, looking up the flow in a local flow table, and applying the information in the flow table to the flow.

Zaumen in view of Hedge does not teach any of the claimed features of 1) receiving at a first device the bidirectional network data flow comprising at least one outbound message element that is associated with an outbound quality of service treatment value, wherein the first device is one of one or more devices; 2) creating and storing in a computer-readable medium an inbound quality of service value in association with information identifying the bidirectional network data flow; 3) receiving one or more inbound message elements at a second device, wherein the second device is one of the one or more devices and the second device is distinct from the first device; 4) determining that the inbound message elements are associated with the same bidirectional network data flow; 5) accessing, from the second device, the computer-readable medium containing the inbound quality of service value; or 6) applying the inbound quality of service value to the one or more inbound message elements based on the stored information.

For example, specifically regarding feature 3), there is no mention of receiving one or more inbound message elements at a second device, wherein the second device is one of the one or more devices and the second device is distinct from the first device. First, neither Zaumen nor Hedge even teaches a second device. The inventions of Zaumen and Hedge are

usable only on a single device. Second, neither Zaumen nor Hedge teach a QoS lookup table that is accessible by a second device. Because these concepts are lacking, Zaumen in view of Hedge could not possibly teach feature 3).

As another example, consider feature 5). There is no teaching in Zaumen or Hedge of accessing, from the second device, the computer-readable medium containing the inbound quality of service value. As stated above, first, neither Zaumen nor Hedge even teaches a second device. Second, neither Zaumen nor Hedge teach a QoS lookup table that is accessible by a second device. Because these concepts are lacking, Zaumen in view of Hedge could not possibly teach feature 5).

Embodiments of Claims 1, 7, 12, and 17 provide numerous improvements over the prior art. Among these improvements is automatically applying bi-directional quality of service treatment to network data flows, one part of which includes providing QOS values to inbound messages associated with a bidirectional data flow – even when those messages have no QOS value of their own and no outbound message containing values have been received at the device. Consider this example: a message is sent from a server S, which can set QOS values for messages, through router R1, to a client C, which cannot set QOS values, as part of bidirectional data flow B, which has a QOS associated with it. When C sends a reply to the S, through a different router R2, C cannot specify a QOS value itself. However, various embodiments of Claims 1, 7, 12, and 17 determine an inbound QOS value for the inbound messages (from C to S) in the bidirectional data flow B and set the inbound QOS for messages sent from C to S associated with B, even though the bidirectional flow is traveling through a different router (R2 as opposed to R1). In the claims, feature 6) reflects the foregoing improvement. Zaumen in view of Hedge does not teach any such feature.

Further, there is no suggestion in the references or elsewhere to combine the prior art references. “It is fundamental that rejections under 35 U.S.C. §103 must be based on evidence comprehended by the language of that section.” *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ

769, 775 (Fed. Cir. 1983) “[The factual inquiry whether to combine references] must be based on objective evidence of record.” *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002). The Office Action cites the motivation: “one of ordinary skill in the art would have been motivated to [[combine these references]] in order to implement the more efficient use of the fixed space available in memory for storing network flow entries in both directions of a bi-directional network flow, thereby creating a more efficient system.” The rationale stated in the Office Action to combine the references is not taken from the references or any other technical source, but is hindsight based on Applicants’ disclosure. A rationale to combine must come from the references or another competent technical source, not from hindsight gained through review of the Applicant’s disclosure. *In re Gorman*, 933 F. 2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir 1991). Neither the above-cited section nor any other section of *Zaumen* or *Hedge* suggest the above-mentioned rationale for combining nor any other rationale for combining the references.

In addition, if *Zaumen* were to be combined with *Hedge* in order to include the ability to apply QoS levels to both directions in a bidirectional flow, *Zaumen* would no longer be useful for its intended purpose. For example, assume a first data flow (e.g., real time stock quotes) from Device D1 to Device D2 has a QoS value of 1 and a second data flow from D2 to D1 has a QoS value of 100 (where 100 is a lower priority than 1 and the data flow represents client usage data, used for billing the client on a monthly basis), and the first data flow and the second data flow together make up a bidirectional data flow. If *Zaumen* were to be modified to apply QoS values bidirectionally, then the QoS value used on individual packets of the first and second data flows would be non-deterministic. For example, in a router embodiment of *Zaumen*, where fewer than all packets in a bidirectional stream are parsed to determine what QoS value to apply (which is a common scenario), if the first QoS value was received and applied it to both directions, then either the stock quotes would have a priority too low (100) or the billing data would get a priority too high (1). As another example, if the router embodiment of

Zaumen used the latest QoS value that it determined from parsing a message in the bidirectional flow, then a race condition would occur in which it would be impossible to specify and difficult to predict what QoS value any particular packet would be assigned.

As stated in MPEP 2143.01: "The proposed modification cannot render the prior art unsatisfactory for its intended purpose." This rule holds because one of ordinary skill in the art would not make such a combination. Since the combination of Zaumen and Hedge would render Zaumen unsatisfactory for its intended purpose of applying appropriate QoS values to a data flow, the combination is not proper.

Therefore, since there is no evidence supporting the combination of the two references and the references, if combined, would render Zaumen unsatisfactory for its intended purpose, the rejection is unsupported and the Applicant respectfully requests withdrawal.

As Zaumen in view of Hedge does not teach or disclose the features of Claims 1, 7, 12, and 17, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 1, 7, 12, and 17.

2. Claims 2, 3, 8, 9, 13, 14, 20, and 21 are rejected under 35 USC 103(a) as being unpatentable over Zaumen in view of Hedge. The rejection is respectfully traversed.

Although Claims 2, 3, 8, 9, 13, 14, 20, and 21 are not the same, because the Office Action has applied the same reasoning for each of Claims 2, 3, 8, 9, 13, 14, 20, and 21, the following remarks will consider all of these claims together.

Dependent claims also incorporate each and every feature of the independent claim from which they depend. Since independent Claims 1, 7, 12, and 17 are allowable, as discussed above, Claims 2, 3, 8, 9, 13, 14, 20, and 21 are also allowable because they depend, directly or indirectly, from one of Claims 1, 7, 12, or 17. In addition, each of Claims 2, 3, 8, 9, 13, 14, 20, and 21 independently introduces one or more limitations that render them patentable over the prior art of record.

The Office Action states that all additional features introduced by each of these claims are presented in Zaumen (col. 5; lines 47-54). This is incorrect. The cited section of Zaumen reads:

“The packet's headers are then evaluated against the entries in the forwarding memory 113 that are of the identified class. A matching entry will have one or more subsystem ports identified in the associated memory 114 as well as a certain QOS. The packet will then be forwarded, based on the associated data, out of the inbound subsystem 110 or to another subsystem 120, as identified in the associated memory.” (Col. 5; lines 47-54)

The cited section does not teach the features of any of Claims 2, 3, 8, 9, 13, 14, 20, and 21. For example, regarding Claim 2, the Zaumen patent does not teach the concepts of a bidirectional data flow, an outbound message, or an inbound quality of service value. Therefore, the Zaumen patent could not teach or disclose that receiving a bidirectional network data flow comprises receiving a bidirectional network data flow comprising at least one outbound message element that is marked with a DSCP value and wherein applying the inbound quality of service value comprises marking the inbound message elements with the DSCP value.

Applicants note that the Office Action does not articulate an independent rationale to combine Zaumen with Hedge to result in the subject matter of any of Claims 2, 3, 8, 9, 13, 14, 20. The discussion of these claims is conclusory. As Zaumen in view of Hedge does not teach or disclose the features of Claims 2, 3, 8, 9, 13, 14, 20, and 21, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 2, 3, 8, 9, 13, 14, 20, and 21.

3. Claims 5, 6, 11, 16, and 22 are rejected under 35 USC 103(a) as being unpatentable over Zaumen in view of Hedge. The rejection is respectfully traversed.

Although Claims 5, 6, 11, 16, and 22 are not the same, because the Office Action has applied the same reasoning for each of Claims 5, 6, 11, 16, and 22, the following remarks will consider all of these claims together.

Dependent claims also incorporate each and every feature of the independent claim from which they depend. Since independent Claims 1, 7, 12, and 17 are allowable, as discussed above, Claims 5, 6, 11, 16, and 22 are also allowable. In addition, each of these dependent Claims 5, 6, 11, 16, and 22 each independently introduce one or more limitations that independently render them patentable over the prior art of record.

The Office Action states that all additional features introduced by each of these claims are presented in Zaumen (Col 6; lines 60-63; Col 8; lines 60-64). This is wrong.

The cited sections of Zaumen read:

“The ordering is normally set by requiring that the number of wildcard bits be lower in earlier entries, by placing entries that support resource-reservation protocols such as RSVP before those having default values, and by ordering entries to support administrative criteria.” (Col 6; lines 60-63)

“Exceptions to the above removal of entries based on time-out periods include the situation of RSVP signaling, where a flow entry is managed explicitly by RSVP. In that case, RSVP signaling between the source and destination will determine when the flow entry should be removed from the forwarding memory 123.” (Col 8; lines 60-64)

The cited sections do not teach the features of any of Claims 5, 6, 11, 16, or 22. For example, regarding Claim 5, Zaumen does not teach the concepts of an inbound RSVP PATH message, inbound message elements, or an inbound quality of service value. Therefore, the Zaumen patent could not teach or disclose that applying the inbound quality of service value to the inbound message elements based on the stored information comprises automatically generating an inbound RSVP PATH message for the flow when the inbound message elements include an RSVP PATH message.

As Zaumen in view of Hedge does not teach or disclose the features of Claims 5, 6, 11, 16, and 22, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 5, 6, 11, 16, and 22.

4. Claims 4, 10, 15, and 19 are rejected under 35 USC 103(a) as being unpatentable over Zaumen in view of Hedge. The rejection is respectfully traversed.

Although Claims 4, 10, 15, and 19 are not the same, because the Office Action has applied the same reasoning for each of Claims 4, 10, 15, and 19, the following remarks will consider all of these claims together.

Dependent claims also incorporate each and every feature of the independent claim from which they depend. Since independent Claims 1, 7, 12, and 17 are allowable, as discussed above, Claims 4, 10, 15, and 19 are also allowable. In addition, each of these dependent Claims 4, 10, 15, and 19 each independently introduce one or more limitations that independently render them patentable over the prior art of record.

The Office Action states that all additional features introduced by each of these claims are presented in Zaumen (Col 5; lines 36-38). This is wrong.

The cited sections of Zaumen read:

“In yet another embodiment, the forwarding memory may be implemented by a programmed processor or hardwired logic circuit that implements a hash table.” (Col 5; lines 36-38)

The cited section does not teach the features of any of Claims 4, 10, 15, and 19. For example, regarding Claim 4, Zaumen does not teach the concepts of a bidirectional network data flow or an inbound quality of service value. Therefore, the Zaumen patent could not teach or disclose that the creating and storing step comprises creating and storing a hash entry in a hash table that uniquely identifies the bidirectional network data flow and that includes the inbound quality of service value.

As Zaumen in view of Hedge does not teach or disclose the features of Claims 4, 10, 15, and 19, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 4, 10, 15, and 19.

5. Claim 18 was rejected under 35 U.S.C. §103 as allegedly unpatentable over Zaumen in

view of Hedge, further in view of Aukia et al, U.S. Patent No. 6,594,268. The rejection is respectfully traversed.

Regarding Claim 18, the Office Action states that the Zaumen in view of Hedge teaches all of the features of Claim 18 except for one. In the Office Action, a limitation not contained in the patent application is cited as the limitation not taught by Zaumen in view of Hedge. It is not clear which limitation(s) are believed to be taught by Aukia, so this response will discuss Claim 18 as a whole.

The Zaumen patent teaches a method for obtaining QOS information, storing QOS information in a memory associated with a unidirectional dataflow, and applying the QOS information to messages associated with the unidirectional dataflow. The Hedge patent teaches performing switching and routing of incoming data packets by determining with what flow they are associated; looking up the flow in a local flow table and applying the information in the flow table to the flow.

The Aukia patent at column 4, lines 58-67 teaches a method for generating new routing paths in a packet network for unidirectional packet flows in response to changes in routing topology and QOS information.

Zaumen in view of Hedge further in view of Aukia do not teach any of the features of Claim 18. In particular, none of the references teaches: 1) a first end station that communicates with other end stations in the network using packetized message elements; 2) a first router coupled to the first end station and capable of routing the message elements among the first end station and the other end stations and automatically applying quality of service treatments to data flows, and comprising a memory configured to store information identifying the data flows and an inbound quality service value associated with each of the data flows, and a stored program that can access the information in the memory and which, when executed by the first router, carries out the steps of: 2a) receiving at the first router a bidirectional network data flow comprising at least one outbound message element that is associated with an outbound quality

of service treatment value; and 2b) creating and storing in a computer-readable medium an inbound quality of service value in association with information identifying the bidirectional network data flow; 3) a second router coupled to the first end station and capable of routing the message elements among the first end station and the other end stations and automatically applying quality of service treatments to the data flows, and comprising a second memory configured to store information identifying the data flows and an inbound quality service value associated with each of the data flows, and a second stored program that can access the information in the second memory and which, when executed by the second router, carries out the steps of 3a) receiving one or more inbound message elements; 3b) determining that the inbound message elements are associated with the same bidirectional network data flow; 3c) accessing the computer-readable medium containing the inbound quality of service value; and 3d) applying the inbound quality of service value to the one or more inbound message elements based on the stored information.

For example, specifically regarding feature 3a), there is no mention of a second device receiving one or more inbound message elements at a second device. First, none of Zaumen, Hedge, or Aukia even teaches a second device. Second, none of Zaumen, Hedge, or Aukia teach a QoS lookup table that is accessible by a second device. Because these concepts are lacking, none of Zaumen in view of Hedge, further in view of Aukia could not possibly teach feature 3a).

As another example, consider feature 3c). There is no teaching in Zaumen, Hedge, or Aukia of accessing, from the second device, the computer-readable medium containing the inbound quality of service value the computer-readable medium containing the inbound quality of service value. As stated above, first, none of Zaumen, Hedge, or Aukia even teaches a second device. Second, none of Zaumen, Hedge, or Aukia teach a QoS lookup table that is accessible by a second device. Because these concepts are lacking, Zaumen in view of Hedge, further in view of Aukia could not possibly teach feature 3c).

As Zaumen in view of Hedge, and further in view of Aukia does not teach or disclose the cited features 1, 2, 2a, 2b, 3, 3a, 3b, 3c, or 3d, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 18.

Further, there is no suggestion in the references or elsewhere to combine the prior art references. "It is fundamental that rejections under 35 U.S.C. §103 must be based on evidence comprehended by the language of that section." *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983) "[The factual inquiry whether to combine references] must be based on objective evidence of record." *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002). The Office Action cites the motivation: "one of ordinary skill in the art would have been motivated to [[combine these references]] in order to allow for data flows to be internetworked outside of the local packet measuring device." The rationale stated in the Office Action to combine the references is not taken from the references or any other technical source, but is hindsight based on Applicants' disclosure. A rationale to combine must come from the references or another competent technical source, not from hindsight gained through review of the Applicant's disclosure. *In re Gorman*, 933 F. 2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir 1991). Neither the above- cited sections nor any other section of Zaumen, Hedge, or Aukia suggest the above-mentioned rationale for combining nor any other rationale for combining the references.

In addition, as stated above, the combination of Zaumen and Hedge is improper. The proposed combination of Zaumen, Hedge, and Aukia renders Zaumen unsatisfactory for its intended purpose for the same reasons given above at pp. 19-20. The addition of Aukia to the combination of Zaumen and Hedge does not abate the fact that Zaumen cannot be modified to work with bidirectional data flows and still function satisfactorily. Therefore, even if there had been a suggestion to combine Zaumen, Hedge, and Aukia, the references cannot be combined for at least reason that the combination would render Zaumen unsatisfactory for its intended purpose.

Therefore, since there is no evidence supporting the combination of Zaumen, Hedge, and Aukia and the combination would render Zaumen unsatisfactory for its intended purpose, the rejection is unsupported and the Applicant respectfully requests that it be withdrawn.

CONCLUSION

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. The applicant is concurrently filing a Request for Continued Examination. The Applicant also believes that all issues raised in the prior Office Action have been addressed and that allowance of the pending claims is appropriate. Entry of the amendments herein and further examination on the merits are respectfully requested.

The Examiner is invited to telephone the undersigned at (408) 414-1208 to discuss any issue that may advance prosecution.

Any fee that is believed to be due specifically in connection with this Reply should be covered by an attached check. To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. § 1.136. The Commissioner is authorized to charge any additional fee that may be due in connection with this Reply to our Deposit Account No. 50-1302.

Respectfully submitted,

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No Attachments

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On January 23, 2004

By:


Angelica Jaquez